

A New Dragonet (Callionymidae) of the Genus *Callionymus* from Australia

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Abstract A new callionymid fish, *Callionymus sphinx*, is described on the basis of one male specimen from Shoal Bay, Northern Territories, Australia. It differs from the nearest allied species, *Callionymus erythraeus* Ninni, 1934, by the different shape of the first dorsal fin (4th spine short, not filamentous), the more elongate last ray of the second dorsal fin, the preopercular spine shape, the pectoral fin length, and the color pattern of the first and second dorsal fins, anal fin, head, and body (no saddle-like blotches).

During the examination of unidentified callionymid fish material from the Northern Territory Museum of Arts and Sciences, Darwin, Australia (NTM), we found a new species of callionymid fish from Shoal Bay, Northern Australia. This new species is described in the present paper. Methods follow those of Fricke (1980, 1981).

Callionymus sphinx sp. nov.
(Fig. 1)

Holotype. NTM S10183-001, male, 50.5 mm SL, Shoal Bay, Northern Territories, Australia, N.T. Fisheries, St. D 113/3, 19 Nov. 1974.

Diagnosis. A *Callionymus* of the subgenus *Callionymus* with four spines in the first dorsal fin, nine rays in the second dorsal fin, eight rays in the anal fin, 19~20 pectoral fin rays, a preopercular spine formula $1^{3\sim4}_1$, a first dorsal fin (in the male) with second and third spines filamentous, and a black ocellus on the third membrane.

Description. D_1 IV; D_2 viii, 1; A vii, 1; P_1 i, 17~18, i (totally: 19~20); P_2 I, 5; C (i), i, 7, ii, (i). Proportions of the holotype see Table 1.

Body elongate and depressed. Head depressed. Interorbital distance 4.9 in eye. Occipital region with two low bony ridges. Branchial opening dorsal in position. Preopercular spine length 2.5 in head; preopercular spine with an upcurved main tip (posterior tip), a convex smooth ventral margin, an antrorse spine at its base, and three to four upcurved or slightly recurved points at its dorsal margin (formula: $1^{3\sim4}_1$; Fig. 1B). Urogenital papilla

elongate in the male, 7.4 in head. Lateral line reaching from eye to end of fourth branched caudal fin ray (counted from above), with a long suborbital branch and a short preopercular branch; the lines of the opposite sides are interconnected by a commissure across the occipital region and across the dorsal part of the caudal peduncle.

First dorsal fin high in the male, first spine not filamentous, its length 4.3 in SL; second and third spines very long, filamentous, second spine 1.6 in SL, third spine 1.7 in SL. Fourth spine very short, not filamentous, 14.2 in SL. Second dorsal fin distally straight, last ray elongate. Rays unbranched except for the last which is divided at its base. First ray 7.1 in SL, last ray 4.8 in SL. Anal fin beginning on a vertical through second ray of second dorsal fin. Rays unbranched, the last divided at its base. First ray 11.2 in SL. Last ray 8.9 in SL. Pectoral fin reaching to mid-base of third anal fin membrane when laid back. Pectoral fin length 4.1 in SL. Pelvic fin distally convex, reaching to mid-base of first anal fin membrane. Pelvic fin length 3.4 in SL. Caudal fin distally convex, without filaments.

Color in alcohol. Head and body brown, thorax and belly light brown. Back with numerous gray marblings. Side of body with a row of dark brown blotches. Cheeks with dark brown spots. Eye dark gray. Operculum with brown spots.

First dorsal fin whitish, with a dark ocellus on third membrane. First and second mem-

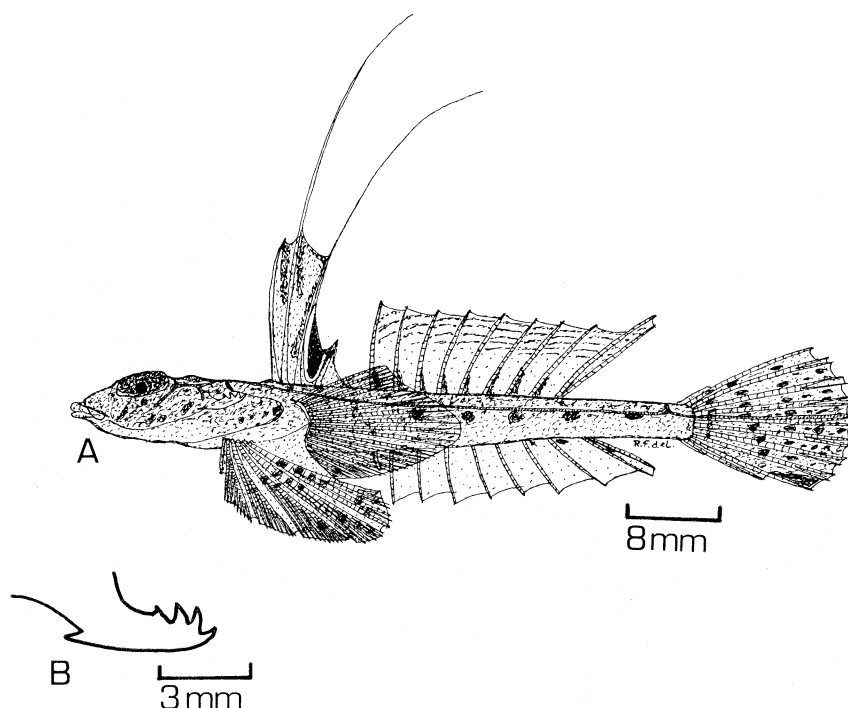


Fig. 1. *Callionymus sphinx* sp. nov., holotype, male, 50.5 mm SL, NTM S10183-001, Northern Australia. A, Lateral view; B, Left preopercular spine.

branes with vertical dark gray streaks. Second dorsal fin distally with curved lines of dark brown; each ray basally with an elongate vertical dark spot. Anal fin plain whitish except a basal dark spot on each of the posterior three membranes. Pectoral fin irregularly scattered with brown spots. Third to fifth pelvic fin rays with a central and a distal group of dark brown spots. Basal half of caudal fin with vertical rows of dark spots, distal half irregularly scattered with smaller spots, lowermost membrane distally black.

Sexual dimorphism: Not known.

Distribution. *Callionymus sphinx* is known only from Shoal Bay, Northern Territories, Australia. The depth of collection is not known, but should be in shallow water according to accompanying material of *Callionymus macdonaldi* Ogilby, 1911.

Etymology. The name "*sphinx*" refers to the shape of the head which is looking like the Sphinx in Gizeh, Egypt, a statue, half human, half lion, built about 2500 B.C.

Relationships. *Callionymus sphinx* differs

from the nearest allied species (fin ray counts agree, D_1 shape and preopercular spine similar), *C. erythraeus* Ninni (Ninni, 1934: 55~56, pl. 13; Fricke, 1980: 63~72, figs. 1~2, tabs. 1~3; Fricke, 1983: 138~142, figs. 37~38) by the shape of the preopercular spine (less curved at its base), the spine proportions of the first dorsal fin (third spine nearly as long as second spine; fourth spine much shorter, not filamentous), the more elongate last ray of the second dorsal fin, the different color pattern of the first dorsal fin (ocellus on third membrane present), second dorsal fin, anal fin (distally not black), head, and body (see Fig. 1A). It differs from *Callionymus russelli* Johnson (Johnson, 1976: 345~349, figs. 1~2, tab. 1, pl. 1; Fricke, 1983: 253~258, figs. 75~76), the only Australian species with which the new species might be confused, by the filamentous second and third spines of the first dorsal fin, the different spine proportions of that fin, the shorter caudal fin (in the male), the different preopercular spine shape, and the color pattern of the first and second dorsal fins, the anal fin, and the caudal

Table 1. Proportions of the holotype of *Callionymus sphinx* sp. nov. from Northern Australia.

	In SL (50.5 mm)	% of SL	
Predorsal (1) length	3.20	31.23	
Predorsal (2) length	2.10	47.51	
Preanal fin length	1.98	50.43	
Prepelvic fin length	4.30	23.26	
Head length	4.24	23.60	
Body depth	9.21	10.86	
Body width	4.97	20.13	
Caudal peduncle length	5.25	18.35	
Caudal peduncle depth	18.49	5.41	
Caudal fin length	3.82	26.19	

	In head length (11.9 mm)	% of head length	% of SL
Eye diameter	2.84	35.26	8.33
Preorbital length	3.90	25.61	6.04
Maxillary length	6.30	15.87	3.74
First D ₁ spine length	1.02	97.56	23.02
Second D ₁ spine length	0.37	270.86	64.63
Third D ₁ spine length	0.41	244.33	57.66
Fourth D ₁ spine length	3.36	29.81	7.03
First D ₂ ray length	1.68	59.36	14.01
Last D ₂ ray length	1.12	89.25	21.06
First A ray length	2.64	37.95	8.96
Last A ray length	2.11	47.44	11.20
Longest pectoral fin ray length	0.98	102.52	24.19
Pelvic fin spine length	5.34	18.72	5.41
Pelvic fin length	0.79	126.20	29.78

fin, and by the color pattern of the head.

Recently, Nakabo (1982) published a revision of the genera of callionymid fishes, describing a large number of new genera and completely rearranging the previously known genera. According to Nakabo's system, the new species would be a member of the nominal genus *Repomucenus* Whitley, 1931. However, we follow the system of Fricke (1982, 1983), in which the new species belongs to the subgenus *Callionymus* (*Callionymus*), by the reasons discussed by Fricke (1981, 1983).

Acknowledgments

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オーストラリア北部から得られたネズッポ科 *Callionymus* 属の1新種

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オーストラリア北部の Northern Territories の Shoal Bay からネズッポ科 *Callionymus* 属の1新種 *Callionymus sphinx* を雄1個体にもとづいて記載した。 *C. sphinx* は、背鰭第2・3棘が糸状に伸びる、背鰭第3鰭膜に大きな黒斑がある、臀鰭には色がなく後ろ3つの鰭膜の基部にひとつずつ小黒点があることなどで他種と区別される。